

MODEL SHIPS *and* POWER BOATS

JUNE 1949



A PERCIVAL MARSHALL PUBLICATION

6^D

A NEW SERVICE FOR MODEL YACHTSMEN

There are many who would like to participate in this most popular Model Sport, but who are unable to make a Model Boat for the following reasons. Lack of materials, tools, skill or time. In endeavouring to overcome all these obstacles I have pleasure in offering you the advantages of my new service.

1. A Complete Kit of Materials for Hull.
2. Hull assembled but unfinished.
3. Hull completely finished but unpainted.
4. Hull completely finished and painted.
5. As 4 but including Deck Fittings.
6. A complete model with Mast and Sails.

All the above can be supplied in the following classes, 36 in., "M" 6 metre, and 10-rater, either to your own plan or to our own standard design. Full particulars and prices upon request. All work is under the personal supervision of T. Lance, Esq., the well-known International Racing Model Yachtsman.

Best Quality Yacht Fittings in Brass

Turnbuckles. "A" and 10 R size, eyed both ends, 2. - Ditto eye and hook, 2/3 each. "M" and 36 in. size as above, 1/6 and 1/9 each.

Shroud and Stay Plates, single eye 1/-, double eye, 1/3 each.

Anti-Fouling Metal Sheave Blocks with deck plate, 2/6 each.

Spinnaker Hook Plates, 1/6 each.

Quadrant 10R size, 10/6.

Jib Rack, 4/-. Main Horse, 4/-. Jib Horse, 3/-.

Travellers, double 3/- : treble, 4/6.

Best Ivorine Round Bowsers, 1/2 in., 3d. each.

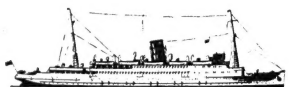
Please include postage with all orders.

Any yacht fitting made to order.

Export enquiries invited.

ARTHUR MULLETT

16, Meetinghouse Lane, Brighton, Sussex.



PLANS of FAMOUS SHIPS

We specialise in really authentic plans of famous ships, both Sail and Power. These drawings are suitable for the construction of first-class scale models—not toys.

Fully illustrated catalogues can be supplied as under :

Sailing Ship Catalogue, Price 9d.

Power Craft Catalogue, Price 6d.

(post free)

Available from all leading dealers in
Model Supplies

or

Holborn Drawing & Tracing Co.

60-62, Queen Elizabeth Avenue,
Hillington, Glasgow, S.W.2.

WILSON, MACDUFF & CO. LTD.

5, VICTORIA STREET, LONDON, S.W.1

BLUEPRINTS

PROBLEMS
Tea Clipper, "Stonehouse," on four 30 in. x 20 in. prints, to build a 38 in. working sailing model without the aid of a large false keel, 16s.

Yacht. Four prints, three 30 in. x 20 in., and one smaller, full size sections for 22 1/2 in. and 45 in. with a scale for a 10-rater, 70 in., 14s.

Working Model Liner, "Stirling Castle." Three 30 in. x 20 in. prints, five scales, 29 in. to 77 in., the modern motor ship, deck by deck, 12s.

Working Model Modern Cargo, "Westerdam" on three 30 in. x 20 in. prints, with four scales, 12s.

Working Model Tribal Destroyer, "Cossack," on two 30 in. x 20 in. prints, four scales, 24 in. to 60 in. Multi Pom-Poms, Multi Machine-Guns, etc., 8s.

Working Model Ocean Going Tug, on two prints, with full size sections for 50 in. or 55 in., 8s.

Marine Centre Flue Boiler, one print covering from 6 in. to 12 in. with all details, 3s. 6d.

Marine Blowlamp, burner and tank details, 3s.

"DOLPHIN" HIGH-SPEED CABIN CRUISER

Length 31". Beam 7 1/2". Suitable for 2 to 5 c.c. engines.

Complete Kit, 42s. 6d. Postage 1s. 2d. extra. Ready cut bulkheads and keel. Hard china built. Prop. and shaft, rudder assembly, glue, full size plan and instructions.

TRY US FOR YOUR POWER BOAT FITTINGS, MARINE STEAM UNITS, OBECH & SPRUCE STRIPWOOD, WATERPROOF GLUE AND PLANS, HIGH-CLASS YACHT FITTINGS, AUTO STEERING SETS, MAST TUBES, GAFFS, GAMMON IRONS, GOOSE NECKS, RUDDERS, BOWSIES, ETC.

SUITS OF YACHT SAILS MADE TO ORDER

FROG DIESEL ENGINES "100" 1 c.c., 48/- FROG

"RED GLOW," 48/- FROG "180" 1.66 c.c.,

54/9 (including P. Tax). MARINE FLYWHEEL & CLUTCH, 4/6 extra.

FULL LISTS 6d. POST FREE.

J. CHAPPELL — THE MODEL SHOP

393-5, Eccles New Road, Weaste, Salford, 5

Telephone : PEN 3079



MONTHLY TERMS ARRANGED

7 oz. Crystal-clear lenses. Ideal holiday, sporting events, 40s. 6d. W.D. model, full-size, in case and leather slings, £3 10s. Very special 6-lens achromatic model, £5 19s. 6d., in case, etc. All post 1s. Also Telescopes. EX-ARMY BELL TENTS £5 15s. 0d. Carriage Paid. Complete Circle, 44 ft., height 9 ft. 6 in.

RIDGE TENT £2 12s. 6d. Carriage etc., 1s. 6d. 5 ft. 6 in. along ridge, 7 ft. 3 in. along wall, 4 ft. 6 in. wide, 3 ft. 6 in. high, 12 in. high wall.

Marquees, Tarpaulins, Camping Equipment.

Send for Bumper List.

HEADQUARTER & GENERAL SUPPLIES LTD.

(MSPB) 196-200 Coldharbour Lane, Loughborough Junction, London, S.E.5.

IMPORTANT NOTICE

As from July, readers of MODEL SHIPS AND POWER BOATS and their friends will be able to obtain all the copies they require. Order from your newsagent now, or write direct to :—

PERCIVAL MARSHALL & CO. LTD.

23 GT. QUEEN ST., LONDON, W.C.2

Model Ships and Power Boats

VOL 2 No 18

JUNE 1949

PERCIVAL MARSHALL & CO LTD. 23 GREAT QUEEN ST. LONDON W.C.2

Contents

The Ship's Log	81	Ship Models at Sheffield	92
Model Hydroplane Hulls (6)	82	Handicapping Model Yachts	94
Two <i>Mayflower</i> Models	85	For the Bookshelf	95
New Naval Signal Flags	89	Editor's Correspondence	95
Admiralty Plans for Modellers	90	Club News	84, 96

The Ship's Log

Our Cover Picture

THIS MONTH we have used a photograph of an Air Sea Rescue Launch at speed. The flared entrance and general hull form of these ships gives a great impression of speed and efficiency. This is, perhaps, the reason why they are so popular as models. Moreover, being comparatively small ships the model can be built to a scale which enables all the details to be included. The hull has the same general lines as the Vosper M.T.B., which is included in our list of designs and which was described in our November issue last year.

An Interesting Model

One of the most interesting ship models made in recent years is that of the cruiser *Dorsetshire*, which has just been finished by Mr. Norman Ough, after 18 months' work. The scale is $\frac{1}{4}$ in.-1 ft. and the vessel is shown in a dry dock undergoing repairs. Mr. Ough was given the fullest assistance by the Admiralty in that he was given free access to the ship and the dock wherein she lay; the result is a model full of interest and of character. The scaffolding around certain parts of the ship is shown, as are the ladders, paint pots, and all the paraphernalia of the dry dock and repairing quay. The ship herself is in a state of glorious disarray and everywhere the paintwork is interrupted by streaks of red lead and of rust. A model such as this entails a higher degree of skill and a closer and keener observation than

does the model of the finished ship. In the finished ship everything is orderly and in its proper place, and all the modelmaker has to do is to make his model as clean and neat as possible. In a realistic model such as the one we are discussing, there is much more to it. The disarray has a foundation of orderliness in that it is all due to the various stages of the work in progress at a given time. All must be properly thought out. Mr. Ough has succeeded in making a very fine model. It is now on view at the Imperial War Museum, Lambeth, and all our readers should make a point of seeing it.

Tell Your Friends

WE ARE asked by our publishing department to pass on the good news that authority has now been granted for a very useful increase in paper consumption to take effect in July, and that the extra paper will be used, in the first instance, to provide enough additional copies of *MODEL SHIPS AND POWER BOATS* to ensure, as far as the increased allowance permits, that every would-be reader can in future be certain of obtaining regular delivery. But, please bear in mind that your newsagent can only obtain regular supplies if he has your firm order. If you have not already given him an order, *do it now*. We should add that the foregoing applies also to our stable companions, *The Model Engineer*, *The Model Railway News*, *The Model Car News* and *Model Aircraft*.

MODEL HYDROPLANE HULLS (6)

Their design and construction

by Edgar T. Westbury

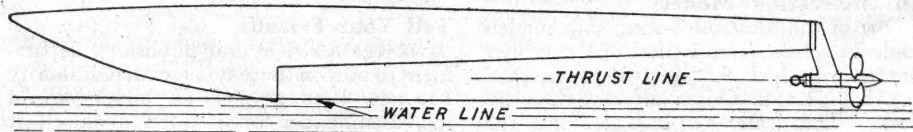
IN connection with the use of attached side planes discussed in last month's issue, the photograph of a new hull by Mr. R. O. Porter will be found of interest, as being fairly typical of modern tendencies in design. This hull is built in the form of a rather narrow rectangular pontoon, or what is commonly known as a "scow," with no step in the floor of the hull itself, the side planes forming the forward planing surfaces, with the rear floor of the hull as the after plane. It is not stated of what material the side planes are constructed, but they are very nicely shaped, and it would appear that it is possible to make adjustments in their planing angles without interfering in any way with the major hull structure.

The matter of hull design, however, was not referred to by Mr. Porter in his covering letter, the motive in submitting the photograph being to call attention to a novel experiment in engine silencing, by discharging the exhaust gas into the interior of the hull. It is frankly admitted that the effect of the hot exhaust gas on the three-ply hull is as yet an unknown factor, but the surfaces exposed to direct gas impact are protected by asbestos lining, and multiple baffles are cut in the bulkheads of the hull, to diffuse the gases before they are allowed to escape by way of side passages around the engine cockpit, and finally by a short funnel aft.

functioning) which was responsible for one of the most popular annual regattas in pre-war days.

The Surface Propeller

Modern ideas in the development of hull design are profoundly influenced by the development of the surface propeller, which is now used in some of the most successful model speed boats, and has been referred to in this journal on several occasions. The idea of using a propeller, only partially submerged, is not in itself new, and some fairly substantial success was attained with it many years ago, both in model and full-size practice, in the type of craft known as a "sea sled" in particular. (This, by the way, might be defined as a stepless planing craft with a concave bottom, the propeller being placed fairly high, and under running conditions, with the boat planing on its side chines, it worked in spray rather than "solid" water.) But largely through somewhat unsound dogma in respect of propeller theory, it was for many years believed that deep immersion, and scrupulous avoidance of any air reaching the propeller, was a necessary factor in propeller efficiency. While it is true, however, that some types of propellers will lose their grip badly if they do not have unbroken water to run in, experience has shown that quite



Planing attitude of hull with surface propeller

Up to the present the boat has not been given a trial on the water, and the results are awaited with interest, especially those of the silencer experiment. The engine is a Stuart Turner 30 c.c. o.h.v. four-stroke which has already seen considerable service and is at present equipped with a M.I. miniature magneto. It should be pointed out that Mr. Porter is well known among the model power boat fraternity, as a pioneer member of the Farnborough Model Power Boat Club (now, alas! no longer

reasonable efficiency can be obtained with a screw propeller working in a mixed medium of air and water, thereby confounding the experts who always believed that such conditions would cause cavitation.

In many cases, attempts were often made to secure complete immersion of the propeller and prevent it "sucking air" by the fitting of "anti-cavitation plates" to the stern of the hull or the propeller bracket. Sure enough, these often improved the running of a boat—but usually for different

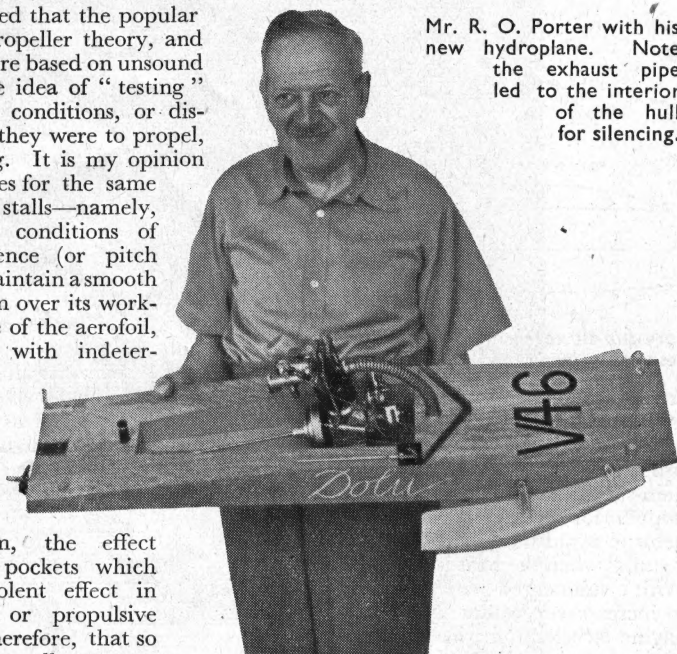
reasons than those for which they were ostensibly fitted; in some instances, the plate acted as an extension of the rear plane, tending to lift the rear floor clear of the water, and being of smaller area than the latter, thereby reducing hull drag. If, in addition to this, the angle of incidence of the front plane was on the steep side, for the particular conditions of running, the extra lift at the rear would reduce this and further increase efficiency.

I have always believed that the popular notions in respect of propeller theory, and especially cavitation, were based on unsound reasoning, and that the idea of "testing" propellers under static conditions, or dissociated from the craft they were to propel, is fundamentally wrong. It is my opinion that a propeller cavitates for the same reason as an aerofoil stalls—namely, because under certain conditions of speed, drag and incidence (or pitch angle), it is unable to maintain a smooth flow of the fluid medium over its working surface. In the case of the aerofoil, this results in eddies, with indeterminate local changes of pressure, in the air through which it moves; but in the case of a hydrofoil, or water propeller, moving in a virtually incompressible medium, the effect is to produce vacuum pockets which have an even more violent effect in destroying "control" or propulsive efficiency. It follows, therefore, that so far from air in the propeller stream being harmful, it rarely does anything worse than increase slip to some extent, and may in some cases be even beneficial, by destroying the vacuum pockets on the low-pressure side of the propeller blade.

A further discussion of propeller theory is perhaps out of place here, but this slight digression has been considered justified, in view of the fact that so many people cannot understand how the partially-submerged propeller can possibly give efficient results. One may regard the "surface" propeller as intermediate between the airscrew and the submerged water propeller, but its general characteristics resemble the latter rather than the former. An airscrew of given power absorption and propulsive efficiency must obviously be much larger in blade area and diameter than a water propeller of similar rating, as it works in a much more tenuous medium; and some increase in blade area and diameter is usually necessary in a

surface propeller, as compared to one totally submerged, but the amount of increase is indeterminate, in so far as present available data is concerned, and is very much less than is often anticipated.

One effect of using a propeller which is only partly submerged is that the blades encounter more "solid" water in the lower half of their rotation; and consequently this introduces a pronounced side thrust on the

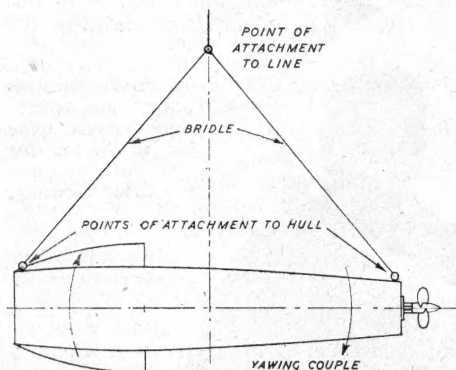


Mr. R. O. Porter with his new hydroplane. Note the exhaust pipe led to the interior of the hull for silencing.

hull at the stern end, which tends to turn it bodily against the direction of propeller rotation. If the boat were running free, the result would be to steer it in a tight circle, and if this were prevented by tethering with the usual single-point attachment, it would be caused to yaw badly and probably capsize; hence the surface propeller is only possible in boats tethered fore and aft by the two-point bridle. There is in any case a pronounced couple tending to capsize the boat inwards, but this can be counteracted by centrifugal force acting above the waterline. This at least partly explains why it was so little used in the past, and indeed experiments in the use of surface propellers were not possible until the bridle system of tethering was officially adopted.

So far, we have only discussed the *practicability* of the surface propeller, and elicited the fact that it can be made to show a reasonable propulsive efficiency. It is,

however, fairly clear that in this respect alone, it can scarcely ever be better than the normal submerged propeller, and may be a good deal inferior in some cases. Most readers will be interested to know in what direction its real advantages, if any, are manifested. It may be said at once that in some types of boats it may not be of any



Fore-and-aft tethering becomes a necessity to resist the yawing tendency of surface propeller.

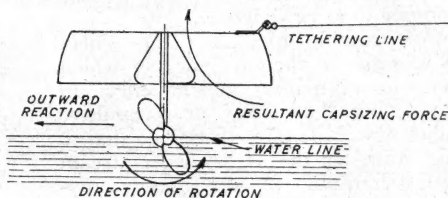
advantage at all, and the design of both the hull and the power plant affect the issue.

One important advantage of the surface propeller, in connection with the types of high-speed i.c. engines which are now popular for speed boat propulsion, is that it helps to avoid the tendency of the engine to "stall" when the boat is getting under way. With a submerged propeller, the load tends to increase very suddenly at a point in the engine acceleration where power is only just adequate to deal with it; and the difficulty is often accentuated by a "flat-spot" in the carburation at the same time. In many cases the engine fails to overcome the increase of load and "conks out." The surface propeller, however, takes up the load more gradually and attains optimum efficiency at higher engine revolutions, when more engine power is usually available.

A further and perhaps more important advantage in boats of modern design, and having a very high power-weight ratio, is that the surface propeller is capable of

lifting the stern of the boat completely off the water, so that the propeller-blade tips act virtually as the rear planing surface, eliminating the drag of the stern floor, and the still greater drag of the propeller shaft and bracket.

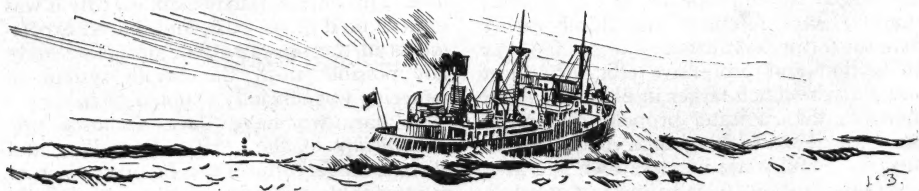
The hulls suited to running in this way usually have the front plane or planes well forward, and of a high angle of incidence, which will only work efficiently when the tail is kept well up. They are not usually capable of getting away "under their own steam" from a standstill, but must be launched with the bows depressed and often at a fair speed, sufficient to get them into a planing attitude. Under the right conditions, and in particular with adequate engine power, they are undoubtedly highly efficient; but it cannot be too strongly emphasised that a very high power output of the plant in relation to the total weight of the boat is most essential to the success of this type of craft. The beginner who attempts to exploit such a design with inadequate power and a somewhat heavy hull will find great difficulty in getting his boat to plane at all; and there is much to be said in favour of getting experience with more modest forms of hull design before attempting the high flights. It is perhaps significant that the major successes of the



Transverse forces acting on hull with partially submerged propeller.

"super" boats have been obtained with engines evolved commercially and available in a highly efficient condition rather than amateur-built engines which have had to be developed and tuned by the constructors themselves.

(To be continued)



TWO MAYFLOWER MODELS

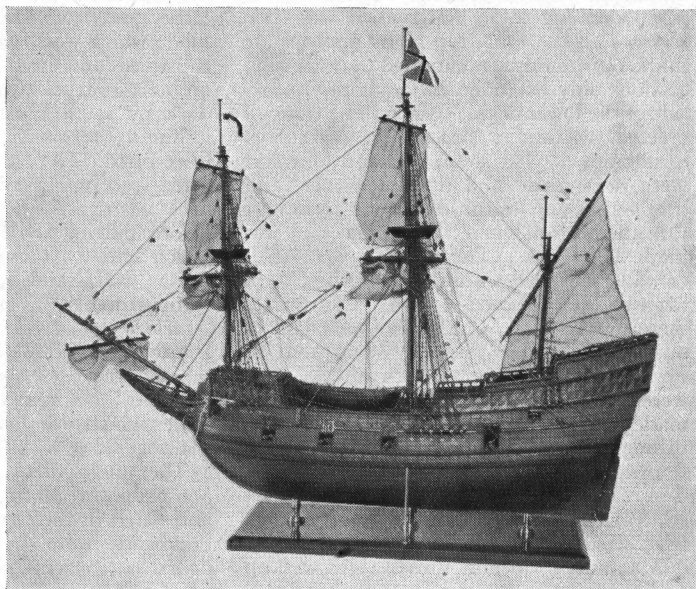
by Laurence A. Pritchard, M.I.N.A.

THE two models are not models of the *Mayflower*, but *Mayflower* models. There is good reason for this difference of designation. When Mr. R. C. Anderson was approached by the Pilgrim Society of Plymouth, Massachusetts, to produce a design for a model of the *Mayflower* he pointed out that it was impossible to do so, but that it *would* be possible to build a model of a ship of the right size, type and date. Hence neither model claims to be more than, as described on their labels, "An

Rochelle and Bordeaux, also that her measurement was about 180 tons.

The first step was to determine suitable dimensions. In order to arrive at these, recourse was had to the particulars of the *Adventure* of Ipswich. This vessel was used in 1627 to illustrate various methods of tonnage measurement. On Mr. Baker's *Old Way* her tonnage was 182. From the dimensions given those of the model were fixed at a length of keel of 64 ft., greatest breadth within the plank 26 ft., depth to top of

Model of the *Mayflower* built by Mr. Pritchard for the Phillips Academy, Andover, Mass. U.S.A. Photo by L. A. Pritchard.



English Merchantman of the Size and Date of the *Mayflower*."

Our knowledge of the *Mayflower* is really very little, in spite of John Alden's famous Journal of the Pilgrim Fathers' voyage, and the researches of Dr. Horrocks and others. She was an old ship in 1620, and had apparently served against the Armada in 1588, so dating from Elizabethan days. She was broken up in 1624 or thereabouts, so her claim to fame came very late in life. It is known that her normal employment was in the Western European trade, chiefly to

keel 11 ft., avoiding odd inches. The total rake, forward and aft, was made the same as the beam, 26 ft. This gave a length from stem to stern post of 90 ft.

For the midship section drawings given in *Fragments of Ancient Shipwrightry* in the Pepysian Library, Cambridge, and *An Excellent, Brief and Easy Treatise on Shipbuilding* in the Scott Collection at the Institute of Naval Architects were compared and found to agree so well that they could be taken as quite normal for the period.

The dimensions having been settled, the

profile and midship section roughed out, the position of deck fittings and the internal arrangements tentatively settled, Mr. Anderson, in the Autumn of 1922, turned these sketches over to me and I then proceeded to draft the "lines" plan, the general arrangement and deck plans on a scale of 1/24 or 1/2 in. to 1 ft. The only difficulty encountered was the placing of the half-deck bulkhead.

The actual work of building was begun on January 1st, 1923. A strong deal table was utilized as a building board, its top being carefully planed off and accurately levelled. A centre line was pencilled on it and the positions of the transverse stations struck across it. A series of moulds or solid sections, each made in two pieces joined at the centre line and securely battened to one side to prevent buckling, were cut from thin pine. Each of these bulkheads or solid sections was screwed to a wooden lug at its top, which was then screwed to the table top at its appropriate mark. It should be mentioned that the solid sections only extended as far as the underside of the lower deck. When these were all erected, we had a skeleton of the model upside down. The stem, keel and sternpost were next made and fitted together, and dropped as one unit into slots cut to receive it in the heels of the sections. This unit was made from oak. The sections were then carefully bevelled with a file and the planking was then proceeded with. This was of Spanish chestnut. The planks were laid in one length where possible from stem to sternpost, alternately on each side. They were attached to the solid sections by hand-made wooden treenails, which were used throughout the model. The planking was stopped two strakes down from the lower deck. The solid sections were then unscrewed from their lugs, which were in turn unscrewed from the table.

The model was now turned right way up and carefully shored up on a narrow inclined slipway fitted to the table top. The interior was given a coat of Solignum as a preservative. Thin intermediate timbers were worked in between the solid sections.

The lower deck was cut out and lined off in imitation planking. Before it was fitted, the top edges of the solid sections were slotted back sufficiently deep to take the heels of the upper frames which were sawn to shape from the solid, and securely screwed in place. Prior to the erection of the upper frames, the deck edge was slotted out to correspond with those in the solid sections. Two continuous deck stringers or carlings were let into the tops of the solid sections,

the width apart of the main hatch. The deck was then fastened down and the various fittings built on it. The upper frames were now erected, and the two remaining strakes of planking fitted. The wales were fashioned from American elm, but the fore parts were cut to shape from oak crooks and scarphed.

The several gun-ports were framed up and the topside planking proceeded with. A gunwale bar was run in on the inside of the frames at upper deck height.

The internal planking of 1/8 in. satin walnut was then proceeded with, and the main capstan, which was in two parts, upper and lower, was made and fitted. The main cables were rove, together with the "messenger," and the lids fitted to the gun-ports.

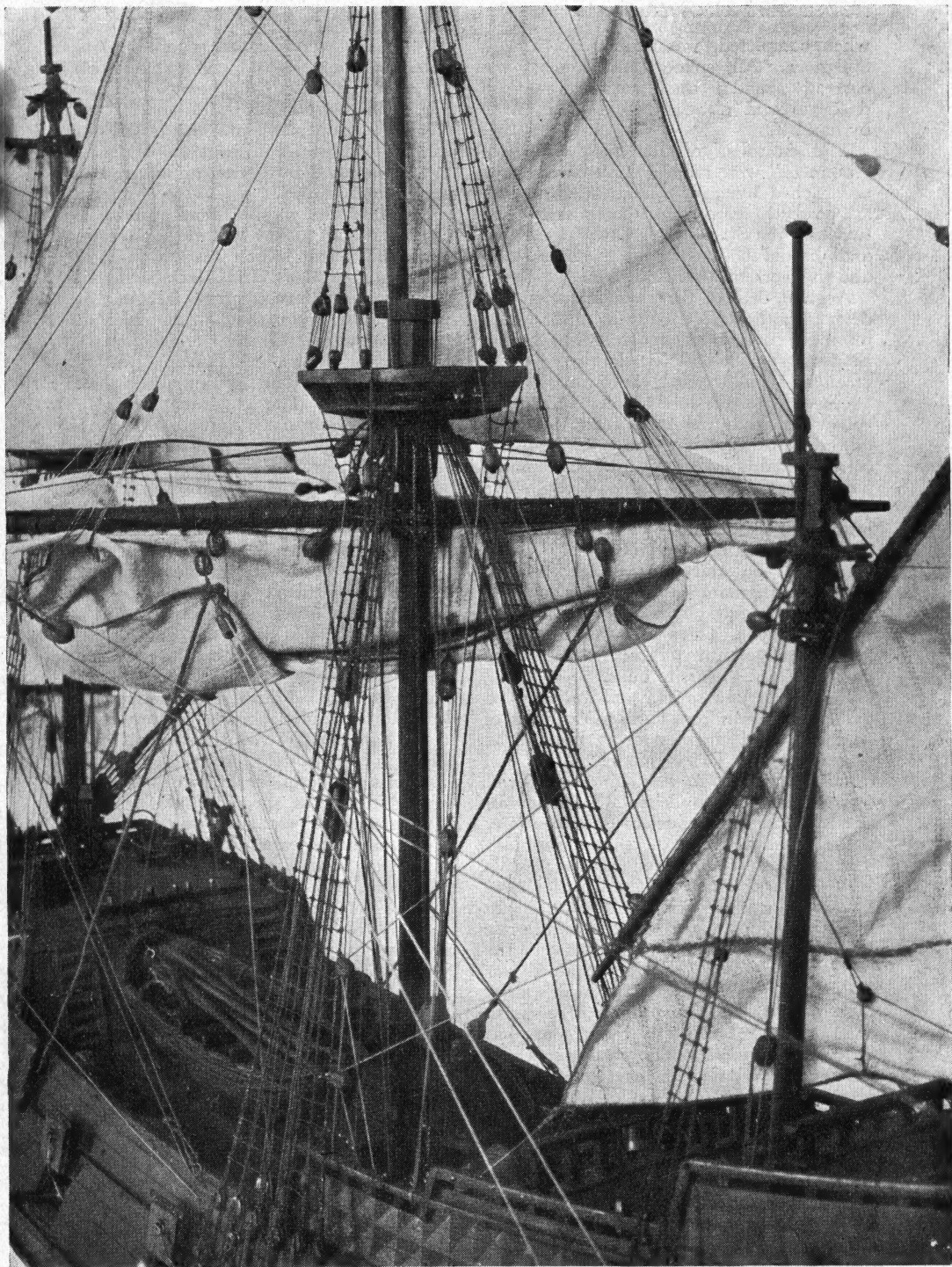
The armament of twelve guns, eight minions and four sakers, was taken in hand. These guns were designed from contemporary sources, patterns were turned up in the lathe, and from these brass castings were made which were machined and bored, and the trunnions fitted. They were mounted on built-up trucks which were secured to the deck by small brass screws. The correct lashings, breechings, tackles and ringbolts, were fitted. The trucks before being finally fitted were painted bright red. The main deck beams were next made and fitted, but before putting in the deck, the whipstaff which actually worked the tiller was inserted in its "roll," and a "bittacle" with three compartments was placed in position. The "messenger" was brought up to and secured round the lower capstan. Care was taken to reeve the halliards through the fore "knight" before fitting the forecastle deck, under which was placed the ship's galley on the port side.

The main deck, forecastle, half-deck and poop were all cut from Spanish chestnut, and fitted in their proper sequence. Their bulkheads were built up complete with doors, lattice windows and mouldings, and fitted in as separate units.

The overhanging beakhead was built up on frames and brackets, and fitted with gratings. With the fitting of the rails and their timber-head stanchions the hull was now virtually complete.

After it had been given a coat of Solignum, the lower masts and bowsprit were proceeded with and fitted. The fore and main tops were turned up from a solid piece of greenheart of the requisite depth. They were then timbered between the top and bottom rims on the outside, and mounted on their trestle and cross-trees.

The cable-laid and hawser-laid rigging cord was specially laid up from flax and,



Close-up photograph of the *Andover* model showing the rigging and some deck details.

Photo by L. A. Pritchard

when completed, was stained down with Solignum. All splices and knots were correctly made, and the heart-shaped deadeyes and all the blocks were made by hand.

The six sails, together with the three "bonnets" were made from a fairly heavy unbleached linen by Mrs. Anderson, and are correctly seamed and bolt-roped. The two flags, the St. George's Cross at the fore and the old Union flag at the main were also the work of Mrs. Anderson.

A great deal of care and attention was devoted to the correct painting of the upper topsides; and after much research the Elizabethan style of decoration by means of green and yellow and black triangles was adopted. For the stern a conventionalised yellow marigold was chosen for the mayflower. This was supported by two equally conventional dolphins with the ship's name painted on a ribbon immediately above them. It was probably not the general practice of the period to paint the name on the stern, but there is evidence of it being done in 1569 and 1624. The modern spelling of the name is based on that of the actual documents relating to the survey of the ship in 1624. The model was despatched to New Plymouth on May 7th, 1925, having taken 2½ years to build.

Early in 1930 a commission was received by Mr. Anderson from Phillips' Academy of Andover, Massachusetts, for a replica of the official Pilgrim Society model, but to half its size to conform to their standard scale of quarter of an inch to the foot. This commission Mr. Anderson handed over in its entirety to the writer, in whose workshop it was built. The model was commenced in June, 1930.

A similar method of construction was followed, but as the writer had built a 60 gun third rate ship of 1670 to the same scale of 1/48th in the interim period between the two *Mayflowers* the experience gained was embodied in this later model. Satin walnut was used throughout instead of Spanish chestnut and oak. A refinement was introduced in this model by fitting specially treated brown paper between all the plank seams throughout the model in order to simulate the caulking.

As in the official model hand-made tree-nails were used as fastenings; there are 1,500 of these in the lower deck alone in each model. For the internal planking 3 millimetre 3-ply was used. The only external difference between the two models is that, in the later Andover model a square tuck was adopted in place of the reverse curve in which the lower transom of the original model was swept into the sternpost.

All decks were laid in separate planks in the later model, also hanging and lodging knees were fitted to the beams. In both models the main hatch beams and fore and aft ridges are portable and the gratings are correctly built-up and framed. Abreast of the mainmast two working miniature bilge pumps are installed.

Probably the most difficult job to be tackled in both models was the construction of the ship's boat, which was stowed on the main hatch gratings. In both cases the boat was correctly planked, carvel fashion, with 1/16 in. satin walnut in the Pilgrim model, and 3 millimetre 3-ply in the Andover one, on timbers and floors. A portable working hand windlass for laying out anchors and cables is fitted. The equipment consists of mast, yard, eight oars, painter, rudder and tiller. A small turned stanchion is fitted under each thwart. The planking of both boats is metal fastened with very minute brass rivets.

The anchors, of which there are two, stowed one on either bow in the fore chains, are built up from square brass rod and sheet brass and are fitted with wooden stocks. Each has a mooring buoy attached to it by a length of coiled line, the buoys being stowed in and lashed to the fore shrouds. Hand-laid cables are bent on to each anchor and are led through the hawse pipes direct to the cable locker. They are lashed to the "messenger," which is taken round the main capstan.

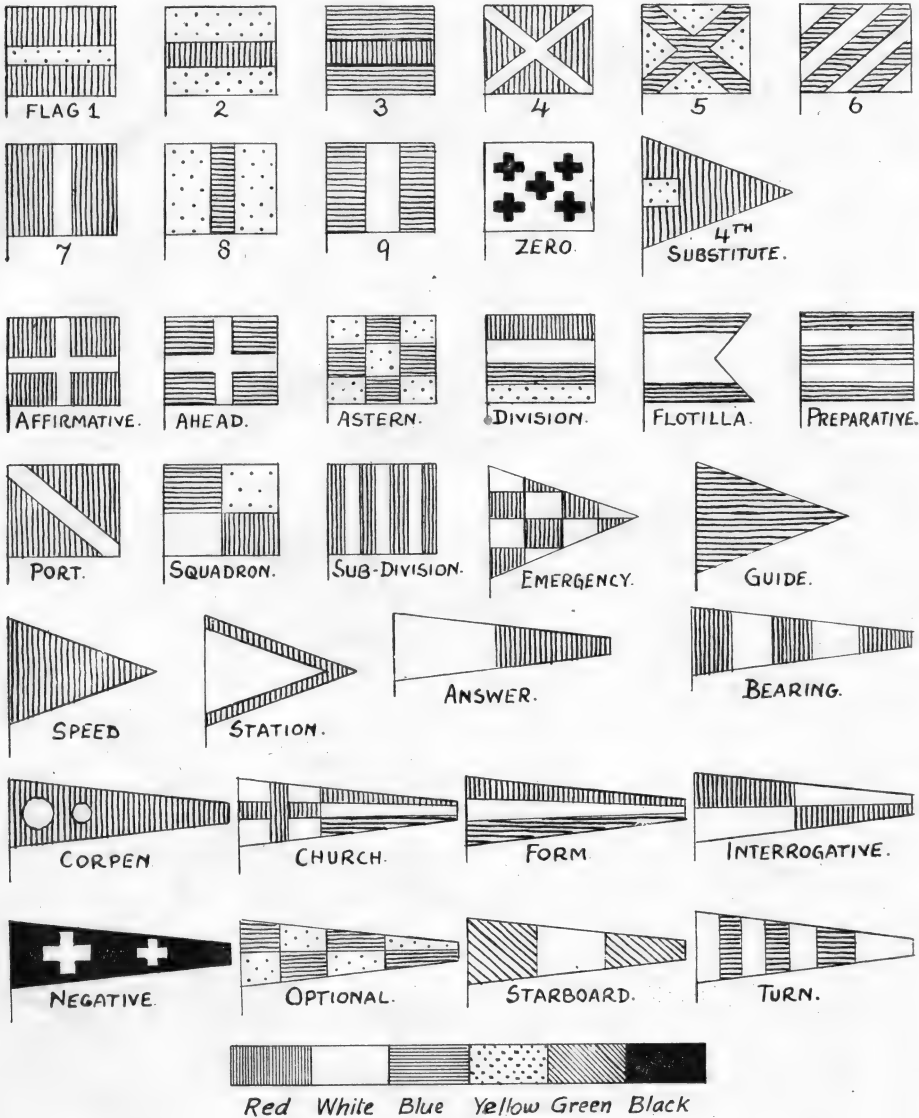
As in the case of the Pilgrim model, the rigging cord was specially laid up and, although much smaller, was found to be considerably easier to splice than the soft flax cordage of the earlier model.

The sails were again made of unbleached linen of much finer texture, and were the work of Miss Elsie R. Greenman, a holder of the Diploma of the London Institute of Needlework.

The Andover model was finally completed in October, 1935. Before being dispatched to America the model had the honour of being exhibited in Southampton with the 22 ft. model of the *Queen Mary*; both being built to the same scale. A very fine photograph of the Pilgrim Society's model formed the frontispiece of the souvenir number of the *Illustrated London News*, published to record the launching of the *Queen Mary*.

The Pilgrim Society's model was inspected while under construction by the late Mr. Arthur Lord who ordered it in the name of the Pilgrim Society of which he was president. Unfortunately, however, he died

(Continued on page 94)



Some Notes on the New Naval Signal Flags

By ALEC A. PURVES

UNTIL the end of 1948 the Royal Navy was using a general code of signal flags which, apart from a few alterations, was basically that of the revision of 1889, many of the flags being taken from Sir Home Popham's revised code of 1827, while some of them were survivors of Lord Howe's code of 1790. Not only had the number of flags reached a total of 86, but,

since the naval flags differed from those of the International Code, it was necessary for H.M. Ships to have two sets of alphabetical flags (Naval and International), and, sometimes, three sets of numeral flags (Naval, International, and United States Naval). And in all these series only one flag was common to two of them.

In order to simplify matters, and,

presumably, to effect smoother working between British and U.S. naval and merchant vessels, a sweeping revision was made at the end of 1948, many of the old flags being discarded, while some new designs were incorporated. From now on, the Royal Navy will follow U.S. Navy practice, and will use the ordinary flags of the International Code for the alphabet, numbered pendants, 1st, 2nd, and 3rd substitutes; these last repeat the first, second, or third flag of a hoist, thereby saving the need for duplicates of each flag e.g. ABA would be hoisted "A, B, 1st substitute," while BCBC would be signalled "B, C, 1st substitute, 2nd substitute"; since a 4th substitute flag is required, the U.S. one has been adopted, as have also the numeral flags 1 to 9, but flag "Zero" remains a British design—white with five black crosses, the old Negative flag. The navy needs both pendants and rectangular flags for numbers, and in adopting the American flags 1 to 9, an easily remembered sequence is now used. The basic colours are three groups of red, yellow, and blue respectively; the first group (1, 2, and 3) have a horizontal bar as the motif, thus, 1 is red with yellow bar, 2 is yellow with red bar, and 3 is blue with red bar; the motif of the second group (4, 5, and 6) is "diagonal," thus 4 is red with a white diagonal cross, 5 is yellow with a blue diagonal cross, and 6 is white with three blue diagonal stripes; in the third group (7, 8, and 9) the motif is vertical; 7 is red with a white vertical stripe, 8 is yellow with a blue vertical stripe, while 9 is divided vertically into three, blue-white-blue (Lord Howe's No. 3 flag of 1790, and No. 7 at Trafalgar).

Since many of the old special flags and pendants were of the same design as International Code flags, alterations were necessary in this section. Some seven of these retain their old significance, while another seven have been borrowed from the U.S. Navy; the others have been interchanged, some of the old naval alphabetical flags which were not of International Code designs being now used for "Special" meanings; of the three flags containing green, an undesirable colour in signal flags, two have been dropped, the old starboard flag being replaced by the old green-white-green No. 9 pendant.

In the accompanying diagram some indication of the new numeral flags, and the special flags and pendants, is given, but as exact proportions have not yet been made available, modellers should accept these with reserve until such particulars are published.

To summarise, the new code consists of the following:

Alphabet: the 26 lettered flags of the 1931 International Code.

Substitutes: 1st, 2nd, and 3rd of the International Code; 4th of the United States Naval Code. (See diagram.)

Numbered Pendants: 1 to 9 and Zero of the International Code.

Numeral Flags: 1 to 9 of U.S. Code, and Zero. (See diagram.)

Special Flags and Pendants (23). (See diagram.)

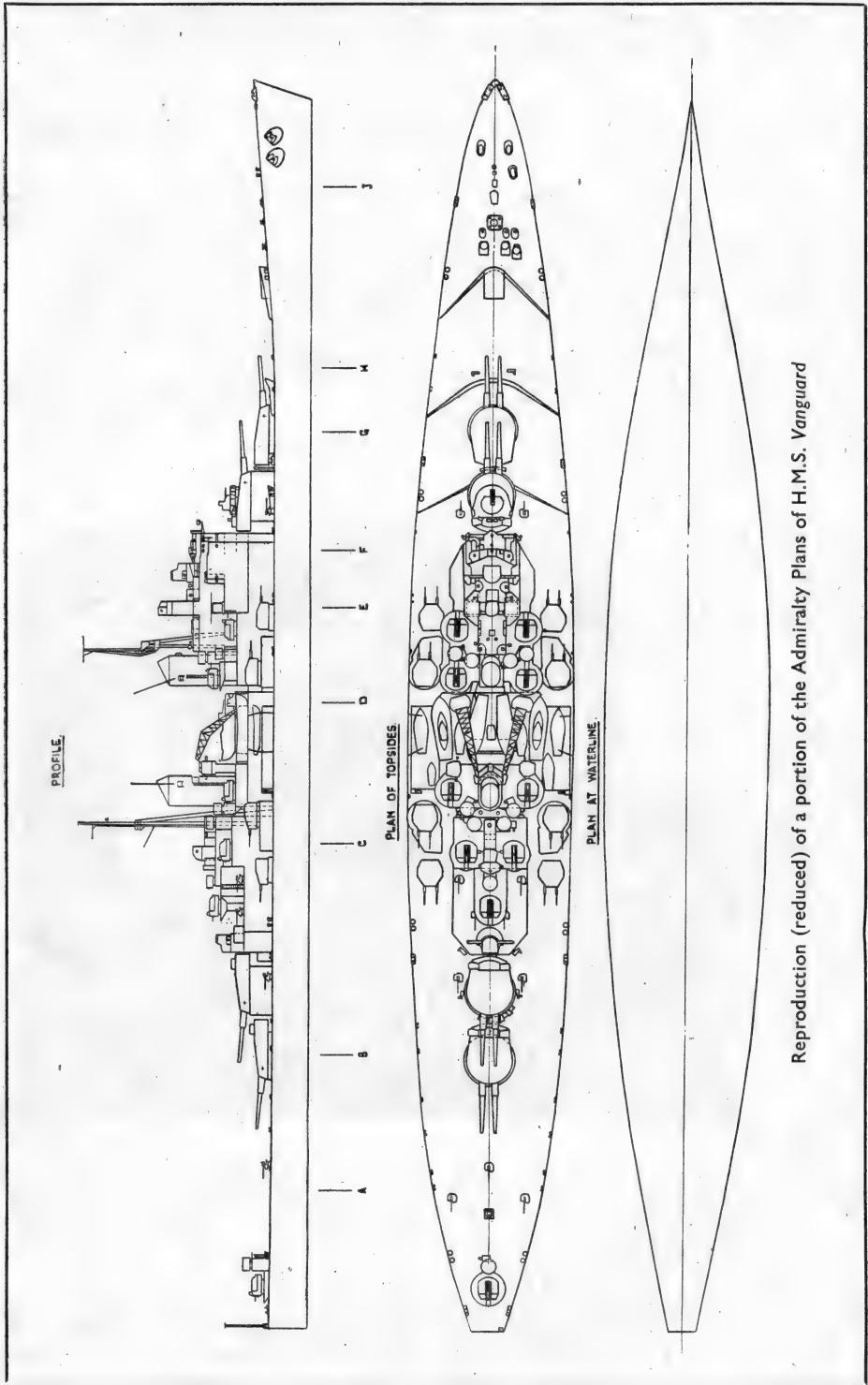
Black Flag; Red Flag; Blue Flag; large Yellow Pendant; large Black Pendant.

(78 flags in all.)

ADMIRALTY PLANS FOR MODELLERS

UP to the present, one of the chief difficulties encountered by modellers who specialise in modern naval craft has been to get reliable data. Overall dimensions were easily procurable. Then again, the superstructure with the plan of the deckhouses varying at the different levels presented a very difficult problem, while to model accurately the complexities of the control tower of a battleship was almost impossible. The Admiralty itself has now come to our assistance in providing an excellent series of plans of most types of ships. These plans include the battleships *Vanguard*, *King George V*, and others; battle cruisers *Hood* and *Renown*; 11 aircraft carriers including *Illustrious* and *Ark Royal*, 19 cruisers 9 destroyers and other types of craft.

The plans, which are drawn to a scale of 50 ft. to 1 in., are intended primarily for waterline models and, as will be seen from the plan of *Vanguard* reproduced herewith, include a profile elevation, deck plan, and plan at waterline. In addition there are sections at the points A to J as indicated on the profile and plans of the various deckhouses at different levels. The underwater body is not shown but as full hull models are usually working models, the underwater form would normally be modified to provide sufficient displacement. The prices vary from 5s. for the Battleships to 2s. 6d. for Destroyers and Monitors. Applications should be made to The Secretary of the Admiralty, (P Branch 1) Bath, Somerset.



Reproduction (reduced) of a portion of the Admiralty Plans of H.M.S. Vanguard

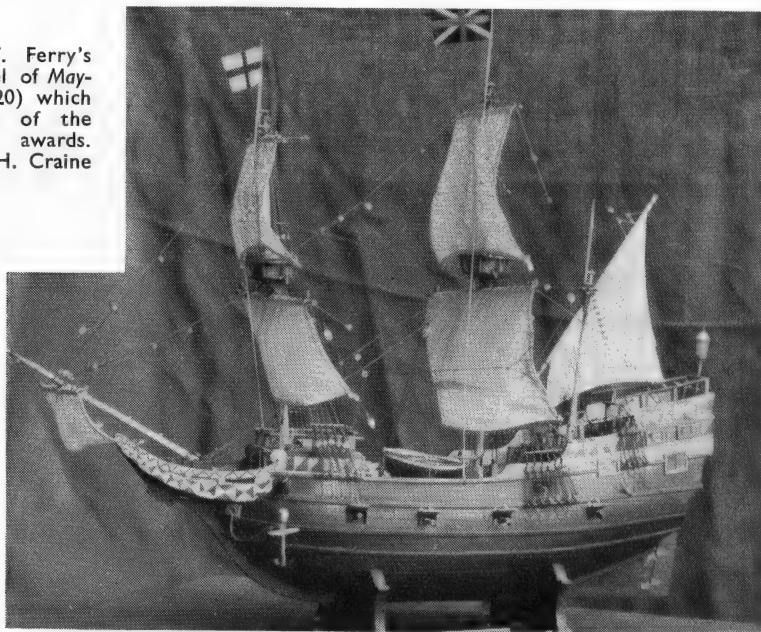
SHIP MODELS AT SHEFFIELD

by 'Jason'

EASTER to Sheffield ship modellers means the annual exhibition. The *Sheffield and District Society of Model and Experimental Engineers* are responsible for organising this three-party show of engines, ships and planes, and it is a popular event locally. I will not say that I am disappointed at this year's show of ship models because I expected some set-back after the marvellous show of last year both in Sheffield and in London. Indeed, I think the Sheffield team at London with seven awards for eight entries set a standard not easily to be beaten.

balanced, free from "scale-scattiness," and has a finish which is not only pleasing to the eye but kind to his model. Undoubtedly, Mr. Horsburgh is an asset to the Society. Power boats and steamships in the larger scales were almost a washout this year, but I noticed some really excellent work in progress for the future, notably a tanker, s.s. *Beaconstreet* (at $\frac{1}{16}$) by D. S. Anthes, and an exceptionally promising hull of *Normandie* (57 ft. to 1 in.), by Mr. Horsburgh. The Ship's Bell (best model of the year) went to F/Lt. E. T. Ferry, D.F.C. for his model of the

F/Lt. E. T. Ferry's fine model of *Mayflower* (1620) which won one of the premier awards.
Photo J. H. Craine



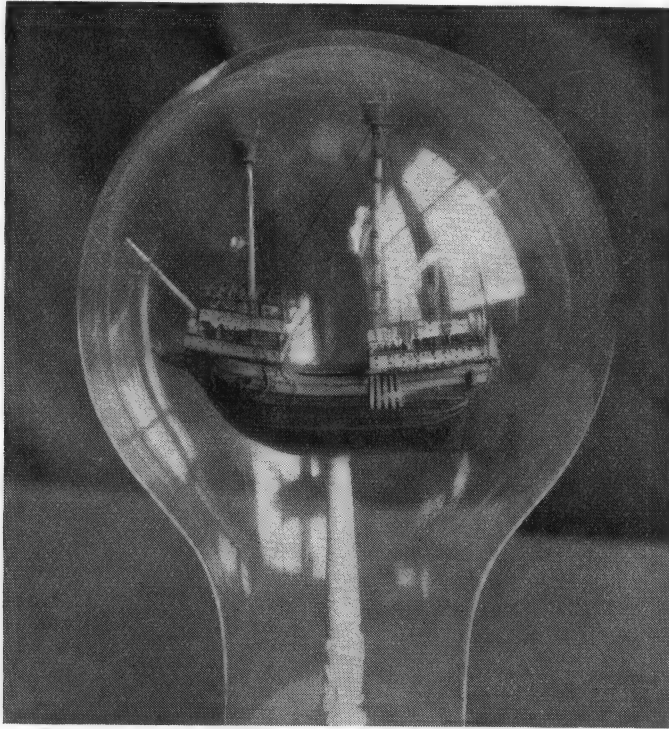
There is much, however, to praise with, perhaps, some minor criticisms here and there. Sheffield stands out in miniature work. The *Jon Gorthon*, a Swedish fruit ship, at the scale of 54 ft. to 1 in., secured the Open Trophy and also the Workmanship Cup. Usually the Workmanship Cup goes to a model still in the construction stage. Mr. J. P. M. Horsburgh is to be congratulated on his double victory. His work is perfectly

Mayflower (1620). F/Lieut. Ferry is well aware that no authentic plans exist of this famous ship. This modeller is a newcomer but he shows promise particularly in a class at present weak in Sheffield—the sailing ship. This *Mayflower* was not free from blemish, but the standard was very high, and he thoroughly deserved his award, together with a Diploma in the Open Trophy competition for the sailing ship section.

L. A. Bond's miniature H.M.S. *Dido* was awarded the Miniature Trophy. I have noticed this model previously. The Accuracy Cup in the eyes of the Sheffielders is an important award. Here, there are two schools of thought. Should this award be made to the modeller who has a full set of blueprints and detail sketches, backed up by photos, or should it be used to encourage

of the period. Here is the meeting ground for sailor and sage to dispute the artists' work of three or four thousand years ago.

The Originality Trophy was won by Mr. C. Money with a *medieval ship inside an electric light bulb*. This ship in a bulb, however, was different. The ship is perched on a pole. Have a look at the photo and see if you can figure it out. It is not the bottle



Mr. C. Money's Medieval Ship in a light bulb. The reflection is not a sail but unfortunately obscures the mizzen mast and its lateen sail.
Photo by J. H. Craine

some research work, even though the completed work may obviously fall short of the meticulous work of the former? The judging favoured the latter. The Reverend A. Everall won with his model of a Nile boat of XVIII Dynasty (c. 1500 B.C.), at a scale of 10 ft. to 1 in. Consider some of these aspects. The information available is usually confined to a few *bas-reliefs* with a varying amount of textual matter from a number of sources in any of half a dozen languages from the contemporary hieroglyphics. The most difficult part is probably that of interpreting the artistic conventions

model technique. It deserved the Originality Trophy.

I've reserved till the last paragraph a criticism, not only for Mr. Brookes, but quite a number like him. He earned a special diploma for choice of subject and unusual materials. He exhibited a barge and it was built up. I've noticed Mr. Brookes' work before. He really must content himself with one model a year. Then, and not till then, will he reach the top class. Quality is to be preferred than quantity and he has the promise of quality.

HANDICAPPING MODEL YACHTS

by Major G. B. Lee

THIS is not a scheme for enabling boats of different classes to sail against each other. That would require nine different time-allowances to provide for various strengths and directions of the wind, and we have had no occasion to calculate them. It is instead a method by which boats of one class and in one club all have an equal expectation of winning.

In any club (disregarding open events) all the year's prizes are taken by about one quarter of the regular competitors. The remainder sail for the love of the sport; they have good races among themselves, and they are thrilled if they take a board from one of the top-sawyers, but their chances of winning a first prize are nil. In this club, therefore, we have instituted a system, borrowed in principle from that used in golf clubs, by which any boat that sails up to or a bit above her current form is equally likely to win a handicap prize. Half our club cups and all our sweepstake races are sailed on this system, and in level events there is a handicap sweep sailed concurrently; and in the past year only one of the boats that have sailed in three or more races has failed to win a first or second prize—and she did not possess a handicap until her last two races.

The system is as follows:—

1. Count up (a) the total number of points a boat has scored, and (b) the total of the possible points, in her last five races (or four, or three races, if she has not sailed more). Subtract (a) from (b), which gives (c) the total number of points she has dropped.
2. Divide (c) by (b), to two places of decimals. Ignore anything less than .05; take .05 or more as the next 0.1.
3. The result (d) is the boat's handicap figure, and is the proportion of the possible score that she will drop in her next race if she sails to form.
4. The actual handicap that she will receive is the possible score for the race multiplied by her handicap figure.

Example: Suppose we take three imagin-

ary boats, *Red*, *White* and *Blue*. In their last five races, *Red* has scored 99 points (a) out of a possible total of 150 points (b), and has, therefore, dropped 51 points (c). (c) divided by (b) = .34, i.e. .3, which is her handicap figure (d). The corresponding figures for the other boats are: *White*, (a) 110, (b) 200, (c) 90, (d) .45—i.e. .5; and *Blue*: (a) 70, (b) 160, (c) 90, (d) .56—i.e. 0.6. In their next race, there are eight starters, scoring is 3 and 2, and the possible score is 35. *Red* will receive $35 \times .5 = 17.5$ —i.e. 18, *Blue* $35 \times .6 = 21$. As has been explained, these points are also what each boat will drop if she sails exactly to form, and the score-sheet will read:

Boat	Score	Handicap	Total
<i>Red</i>	24	+ 11	= 35
<i>White</i>	17	+ 18	= 35
<i>Blue</i>	14	+ 21	= 35

So they will all tie, which is the handicapper's ideal. In practice, one or two boats will sail a bit better than usual and take the prizes, and one or two will be out of form and end at the bottom of the list, but any boat is as likely as any other to come out top. If she does, her handicap will be reduced and she will not find it so easy next time.

There are two more provisos:

1. If a boat has sailed in less than three races, she has not earned a handicap, and must sail off the same mark as the club's back-marker;
2. Races more than two years ago are ignored.

The only catch about the system is that it means a half-hour's evening work for the racing secretary after each race, entering up the record-book and re-calculating the handicap of each boat that sailed. But it has the advantages of being absolutely fair and automatic, and not depending on the judgment or opinion of anyone, so that there can be no complaint or suspicion of unfairness.

TWO MAYFLOWER MODELS (Continued from page 88)

quite suddenly about two months before the model reached New Plymouth.

I am indebted to the pamphlet published by the Pilgrim Society of America entitled, *The Mayflower Model*, the article by Mr. R. C.

Anderson F.S.A. in the *Mariner's Mirror*, Vol. XII, No. 3, July, 1926, entitled *A Mayflower Model*, and to my own article in *Ships and Ship Models*, Vol. 5, No. 58, June, 1936, entitled *A Second Mayflower Model*.

EDITOR'S CORRESPONDENCE

DEAR SIR,—Last year you were good enough to publish a note of mine on the proposed *Guild of Model Shipwrights*. This body had a troubled launching and a stormy short passage before its final wreck in February of this year. Domestic circumstances have prevented me dealing with these happenings until now. I therefore feel that this is a suitable opportunity to recount briefly what has taken place. There are several reasons which have a bearing upon this. *First*: I have had a major share during the past 20 years in the formation of numbers of ship model societies up and down the country and even a share in some of those established abroad. *Second*: it will be obvious that sooner or later some form of national federation will be required. At least that is my opinion. *Third*: such a national effort should be based on goodwill and the support of all. This presupposes a careful examination of the views of modellers throughout the country. Such a national effort should not be the work of any one person no matter how well disposed he may be towards ship modellers and modelling in general. Accordingly I invited a working committee to examine and formulate a suitable constitution. As a basis for these deliberations I wrote to the principal provincial societies inviting their considered opinions on the whole affair. The committee included representatives from the Metropolitan ship model societies.

I am deeply grateful for the very full views sent to me by the organised societies and by individuals. These include among other districts, Merseyside, Sheffield, Bristol, Portsmouth, Nottingham, the Clyde, Weymouth, and South Wales.

Right from the beginning there was a split in the committee which can briefly be described as "status" versus "all embracing membership or federation" in some form or another. The former implied a membership limited to experienced modellers of a proven standard, whereas the latter was an "all-in" membership in some form. As chairman I felt it my duty not to take sides but rather to guide the proceedings. The committee numbered over a dozen with some individuals having practical knowledge of the Clyde, Bristol, and Merseyside districts. It was decided to follow the "status" avenue. It was hoped, among other things, to include a journal, a library, and a form of research and plans service. The annual subscription was fixed at two guineas which was a modest enough fee for the services envisaged.

Frankly, Sir, this failed to enlist the necessary support. The committee had been at work over a year producing a mountain of a constitution which resulted in a mouse of a membership.

It was decided to call off the general meeting which had been arranged for February 19th and return subscriptions already paid. The committee have agreed to bear any losses which might be incurred.

I wish to pay tribute to the members of the committee in their efforts. The failure was not due to lack of trying and if there is any blame to be apportioned, then the major share must be laid on my shoulders.

Yours faithfully,

J. H. CRAINE,
Lieut. Cmdr. R.N.R. (ret.).

St. John's Wood, 24.4.49.

FOR THE BOOKSHELF

SHIP MODELLING HINTS AND TIPS. By "Jason" (Lieut. Cmdr. J. H. Craine, R.N.R.). Published by Percival Marshall & Co. Ltd., London, W.C.2, at 10s. 6d. 117 pages. Royal Octavo.

As explained in the preface, "this is not a book to guide you specially on one particular model, but rather to be of help in making any model." The chapters contain hints on various methods of building hulls, the materials which should be used for the various parts of a ship model, the making of ropes, including a drawing of a machine for "laying" ropes in one's own workshop, and painting and finishing the model.

Useful information is given with reference to guns, anchors, flags, and the hull details of various periods. An interesting chapter deals with miniature modelling, and another with a discussion on seas and the setting of a scenic

model in an appropriate sea. A useful table is given showing the amount of sail which would be carried by the different types of ships under conditions from a calm to a full gale. This should be helpful both to the artist and the scenic ship modeller who usually revels in showing the ship under full sail on a sea which suggests a full gale. Yet another chapter deals with cases, both for transport and for exhibition purposes. In fact, the book is just what it sets out to be—a collection of hints and tips as to ways and means, and items of information likely to be useful to ship modellers of all types; all written in this writer's well-known racy style. The line drawings, which are a feature of the book, were prepared by Mr. G. F. Campbell. Some photographs of notable models are also included. The book concludes with a comprehensive bibliography; it should be on every ship modeller's bookshelf.

News from the Clubs

MODEL YACHTING ASSOCIATION

Important dates to remember for June this year are June 4th-6th, the National Championship Race at Birkenhead for Marblehead yachts; and June 20th-25th, the National Championship Race at Eastbourne for 10-raters.

THE MODEL YACHT SAILING ASSOCIATION

This Association has a very full programme for June, including club matches for Marbleheads on Saturdays, 4th and 18th, and for 10-raters, Saturday, 25th. On Saturday, 11th, the "Victory" Trophy for 10-raters will be competed for. Sunday, 5th is the Team Race with the Southgate M.Y.C. at Kensington; Sunday, 12th, the London League (3rd round) for Marbleheads at Clapham; on the 19th, the 3rd round for the Stanton Cup for 10-raters at Kensington, and on the 26th, the Coronation Cup race for 10-raters at Forest Gate. The Sunday races begin at 10.30 in each case.

Y M 6 m O A

The race for the Gosnell Trophy was held on Sunday May 1st, the fine weather afforded excellent conditions and a grand day's sailing was enjoyed. Mr. C. R. Seabrooke, the Hon. Sec. was O.O.D., the Starter was Mr. O. H. Gosnell, who originally presented the Trophy, and the Scorer was Mrs. Burden. Racing was keen, and the race ended with many close finishes, with the winner, N. D. Hatfield's *Fantasy*, gaining 54 points out of a possible 65. Prizes were presented by Mrs. Gosnell who contributed a cake and some eggs as consolation prizes for boats low on the result.

THAMES SHIP MODEL SOCIETY

This club held a very successful meeting on Wednesday, May 27th, on board the *Discovery*. The Speaker was Mr. Malone, of the Port of London Authority, who gave a very interesting resume of the work of that body. The discussion which followed brought out a number of very valuable points of interest, both to ship modellers and to ship lovers. The trip to H.M.S. *Victory* is fully booked, and bookings for the cruise around London Docks are going very well. A trip to Malden and to some of the waters on the east coast is being arranged for a date later in the summer.

RADIO CONTROLLED MODELS SOCIETY

This Society announces a series of monthly lectures, which started in May, intended primarily for beginners to radio and electrics to cover the whole field of Radio Control in a year. Members will be assisted in their private reading by the provision of notes and references. Visitors, also, will be welcome at the lectures, which started at St. Ermin's Hotel, Caxton Street, S.W.1, at 2 p.m. on Sunday, May 8th, when Mr. J. C. Hogg, General Secretary of the R.C.M.S., gave the first of two talks on "Fundamentals." Details of future meetings and information regarding the Society, may be obtained from the Hon. Sec. Lieut. (L) G. C. Chapman, R.N., Pine Corner, Firwood Rise, Heathfield, Sussex.

BOURNVILLE MODEL YACHT AND POWER BOAT CLUB

The Annual Regatta will be held from Whit Saturday to Monday, at Valley Pool. The event on Whit Monday is a national competition for Power Boats, competitors coming from many parts of the country, and it is expected that several thousand onlookers will be present.

The Civic Restaurant have undertaken to make adequate catering arrangements. Yachts are raced every Saturday in June, on the 11th for all classes, the 18th for 10-raters, and the 25th for 6 metres.

A change of office is announced with the resignation of Douglas Turner as Vice Sailing Captain; his successor is Allan Davis, who won the 6 metres class races on both 16th and 23rd April.

HOVE AND BRIGHTON MODEL YACHT CLUB

From this club we have received the list of fixtures for 1949, and from the number and frequency of the events tabulated, the club is in for a very busy season. 36 in. Marbleheads and 10 raters are classes recognised, and championships in each class are competed for. Model yachtsmen in this neighbourhood should contact the secretary, F. Jennings Esq., 15g, Second Avenue, Hove 3.

MALDEN AND DISTRICT SOCIETY OF MODEL ENGINEERS LTD

In connection with funds for the new headquarters, it has been decided to hold an Exhibition, Fete/Garden Party, at Thames Ditton this Whitsun, June 4th, 5th and 6th. The Exhibition is to be held in the Scouts Hall, whilst the Fete will proceed outside. The track is to be in operation, and passengers will be charged for rides. Refreshments will be provided.

For the 1949 Exhibition, the Society has booked the Queen's Hall, Richmond, for Thursday, Friday and Saturday, October 27th to 29th. It is sincerely hoped that this Exhibition will prove a record-breaking turnout.

All enquiries and further details of forthcoming events can be obtained from Mr. G. F. Tonnstein, 7, Thetford Road, New Malden, Surrey (Malden 4189).

TYNEMOUTH MODEL YACHT CLUB

We have received the programme for the 1949 season. A full range of events is provided, notable dates being July 16th when the North East Coast Championship will be competed for, and August 13th, which is Invitation Day in connection with the Tynemouth Centenary Celebrations week. Many neighbouring clubs will be competing. Full particulars may be had from the secretary, S. H. Walker Esq., 18, King Edward Road, Tynemouth.

BIRMINGHAM MODEL YACHT CLUB

This club is fortunate in having a new sailing water, Witton Lakes, where some excellent sailing has been enjoyed during the past month. All classes of yachts are represented in this club. The "A" Class Cup was won on April 2nd by W. Howitt's *Jenny Wren*, the "M" Class on April 9th by G. Smith's *Kanchi* (evidently she could!), the 36 in. R. on April 16th by E. Mills' *Trixie*, the 10-rater on April 23rd by J. Drury's *Opal*, and the 6 metres on April 30th by S. Langford's *Dorrie*. Further particulars can be obtained from the Racing Secretary, Thornhill, 371, Gravelly Lane, Erdington, Birmingham 23.

HAMMERSMITH SHIP MODEL SOCIETY

We are pleased to announce that the above society has been restarted, and all particulars can be had from the Hon. Secretary R. C. BUTLER, 29, Barnes Avenue, Barnes, S.W.13.

TRADE TOPICS

From our correspondence there still seems to be difficulty in obtaining material and fittings for ship modelling. We have just received from J. Chappell of The Model Shop, 393-5, Eccles New Road, Weaste, Salford, 5, his "Complete Catalogue for the Modeller" which should go a long way toward eliminating such difficulties. Mr. Chappell seems to be in touch with all the

various supply firms and the list contains everything the modeller is likely to need, from the initial drawings to the last stanchions for the railings. All kinds of ship modelling are catered for, yachts, power boats, warships, clipper ships, galleons, etc., and the list concludes with a useful selection of tools of all kinds. The cost is gd. and the list is worth it.

Ready NOW

Ship Modelling Hints and Tips

by

LT. CMDR. J. H. CRAINE

("JASON")

The aim of this book is not to describe the making of any particular ship model or class of models, but to indicate to the constructor the best methods of approach to the subject, the best methods of construction, and to guide him safely through the many pitfalls which beset his path. Nothing is so disappointing to the ship-modeller as to find, when he has at last finished his model, that it is full of anachronisms or that everything is not just shipshape and Bristol fashion. A careful study of this book will be of the greatest help.

The author is one of the best-known writers on the craft of ship modelling. He has the correct background; namely, a lifetime spent at sea, beginning with an apprenticeship in sailing ships, and finishing as an officer in the Royal Navy. Being also a model maker of repute, he is fully equipped to write a sound, practical book on ship modelling, and this he most certainly has done.

Illustrated with many line drawings and half-tone plates. Size 9 in. x 6 in. Cloth bound. 10s. 6d. net.

PERCIVAL MARSHALL & Co. Ltd.
23, GREAT QUEEN STREET, W.C.2

MODEL SHIPS AND POWER BOATS

SALES & WANTS

Private, 3d. per word. Trade, 6d. per word.

Use of Box No. 1s. extra.

CELLULOSE PAINTS. Stovings, Synthetics Catalogue free. Spraying Handbook 3s. 6d., post free.—LEONARD BROOKS & Co., Harold Wood, Essex.

TURNBUCKLES, for Model Yachts, brass eyed both ends 2s., Eye and Hook 2s. 3d. each, smaller size 1s. 6d. and 1s. 9d. Model Yacht Fittings made to order.—ARTHUR MULLETT, 16, Meetinghouse Lane, Brighton.

WANTED. Falconer's "Marine Dictionary," Steele's "Naval Architecture" and other contemporary books on 18th Century Shipbuilding. Offers to—Box No. 67, MODEL SHIPS & POWER BOATS Offices.

WANTED. Strip Wood, about 1 in. x $\frac{1}{2}$ in. for planking hull 4 ft. 6 in. long. Parana Pine, Mahogany or Obeche preferred. Offers to—Box No. 70, MODEL SHIPS & POWER BOATS Offices.

RADIO CONTROL. Home construction kit. Complete with full instructions, circuit and wiring diagrams. Send for further details. Also sensitive relays, nidget components, valves, etc.—E.C.C., 48, Swinbrook Road, London, W.10.

WANTED URGENTLY. Two volumes "The Cutty Sark." State price to—G. L. BUSWELL, 23, Kenley Road, Twickenham, Middlesex.

MODEL LINER. 6 ft. long, $4\frac{1}{2}$ in. draught. Powered by 10 $4\frac{1}{2}$ volt batteries in series. Three decks. Lighting nine bulbs. All metal except decks. £20 or best offer—L. TERRY, "Swingle Swangle," Matfield, Kent.

FOR SALE. Steam Power Plant, Stuart Turner two-cylinder engine $\frac{3}{8}$ in. x $\frac{3}{8}$ in. with Stuart Turner 495 type twin-drum boiler. Pressure gauge and lamp. £8 10s. Electric Cargo ship, 22 in. long, 5 in. beam. Colourful model. £4 10s. Seen by appointment.—POOLE, 8, Caldervale Road, Clapham.

5 ft. SCALE MODEL H.M.S. *Frobisher* for sale. Hull, rudder, screws, shafts, gears in perfect condition. Motor defective. Superstructure needs remodelling. £10 or offer. Can be seen in London, by appointment from—DRAKE, Prior Park College, Bath.

Notices

The Editor invites correspondence and original contributions on all subjects connected with model ships and power boats, which should be addressed to him at 23, Great Queen Street, London, W.C.2. Matter intended for publication should be clearly written, and should always bear the sender's name and address.

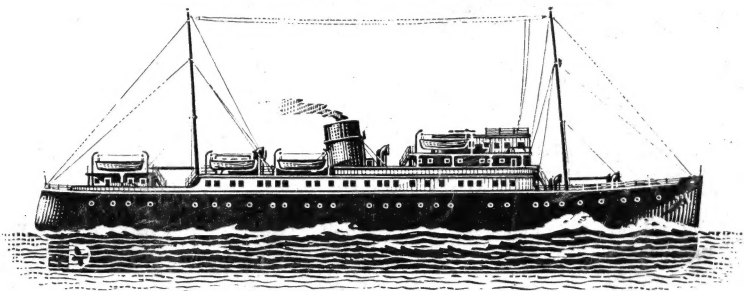
All correspondence relating to sales of the paper should be addressed to THE SALES MANAGER and correspondence relating to display advertisements to THE ADVERTISEMENT MANAGER.

"Model Ships and Power Boats" is published by PERCIVAL MARSHALL AND CO. LTD., at 23, Great Queen Street, London, W.C.2, on the first day of each month. Price 6d. Annual subscription, post free, 7s. 6d.

All rights in this issue are strictly reserved. No part of the contents may be reproduced in any form without the permission of the publishers.

AQUILA

CONSTRUCTIONAL KITS FOR MODEL SHIPS



This illustration shows the fourth model in our range, Kit No. C.204, price 57s. 6d., 39 in. length ARRAN CROSS-CHANNEL STEAMER. A conventional type of Steamer using the plank-built hull. Power obtained from a 3-6 volt electric motor.

Kit includes all ribs cut to shape, stem and stern pieces ready cut. Ample strip wood for planking, sheet for deck and superstructure. Complete propeller and rudder assembly. Complete with illustrated plan and full building instructions, glue, sandpaper, etc.

Full particulars of this and other high-class Constructional Kits of Launches, Cabin Cruisers, Steam Yachts, etc., can be obtained from your local dealer or direct from the manufacturers, enclosing 4d. in stamps.

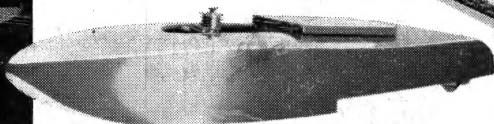
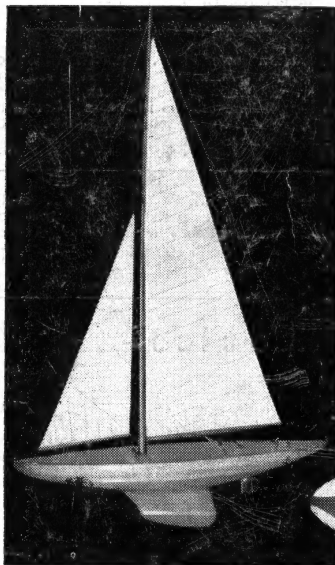
The latest model to be added to this range, "The Dolphin," a 31 in. high speed Cabin Cruiser, suitable for motors of from 2 c.c. to 5 c.c., price 42s. 6d.

MODELLERS SUPPLY LIMITED

Makers of the famous Airyda Model Aircraft and Anorma Model Building Constructional Kits and Sundries.
AIRYDA WORKS, ASPLEY, HUDDERSFIELD. Telephone: 5511 (2 lines)

WORLD FAMOUS DROME KITS

"Fiona" 3' Yacht, complete with tapered masts, sails ready made. All Balsa construction. £4/12/6.
"Drome" special 2 ft. Hydroplane — designed for speed. Water-driven. Beam 8 in. Suitable for diesel, electric and petrol engines. £1/9/6.
Write for fully illustrated Catalogue and guide—price 1/- post free.



MODEL AERODROME, 141, STRATFORD RD., BIRMINGHAM, 11